Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT A. STREET

Appeal No. 1999-1800
Application No. 08/752,667

HEARD: May 1, 2000

Before HAIRSTON, KRASS, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 21, which are all of the claims pending in this application.

Appellant's invention relates to an amorphous silicon semiconductor array in which a cluster of sensor elements or a plurality of sub-pixels are addressed by one gate line and one data line. The array also includes a control line controlling

a switch associated with a sensor element or sub-pixel for translating charge to another sensor element or sub-pixel which is addressed by the data line. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. An amorphous silicon sensor array comprised of a plurality of individually addressable sensor elements and a circuit including gate lines, data lines and a control line for selecting the elements for read out discharge, the array including:

a plurality of clusters of associated sensor elements wherein a sensor element in a cluster includes a switch for switching integrated charge to another of the associated sensor elements; and,

wherein a one of the gate lines and a one of the data lines is associated with each one of the clusters, and the control line is associated with at least one of the sensor elements in each cluster, for selectively and independently addressing for discharge the sensor elements in the array.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Street et al., "Amorphous Silicon Arrays Develop a Medical Image," IEEE Circuits and Devices, July 1993, pp. 38-42. (Street)

Appellant's Admitted Prior Art in the specification (APA)

Claims 1 through 21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Street and APA.

Reference is made to the Examiner's Answer (Paper No. 13, mailed February 9, 1999) for the examiner's complete reasoning in support of the rejections, and to appellant's Brief (Paper No. 12, filed January 19, 1999) and Reply Brief (Paper No. 14, filed April 2, 1999) for appellant's arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellant and the examiner. As a consequence of our review, we will reverse the obviousness rejection of claims 1 through 21.

Claim 1 requires clusters of sensor elements with one gate line and one data line associated with each cluster, and a sensor element in a cluster including a switch for discharging into another sensor element in the cluster. The examiner asserts (Answer, pages 4-5) that Street meets each of these limitations. Appellant, on the other hand, contends (Brief, pages 5-6) that Street fails to meet any of the limitations.[1] We agree with appellant.

[1] Although the examiner lists APA in the statement of the rejection, APA is primarily a description of Street and, therefore, adds nothing thereto.

The examiner (Answer, page 5) has interpreted each data line of Street as being associated with a cluster of pixels because it is connected to an entire row of pixels. Likewise, the examiner has interpreted each gate line as being associated with a cluster of pixels because it addresses an entire column of pixels. However, if, for example, a row of pixels were considered to be a cluster with a single data line associated therewith, that cluster would not have a single gate line also associated with it, as required by the claim. Instead, that cluster would have plural gate lines associated with it, as each pixel in the row would be addressed by a different gate line. In claim 1, though, a single gate line and a single data line must be associated with the same cluster. Therefore, Street's rows and columns cannot meet the claimed clusters.

In addition, as explained above, claim 1 requires a sensor element in a cluster to discharge into another sensor element in the cluster. The examiner has completely failed to address this limitation. As pointed out by appellant (Brief,

---

Further, the examiner focuses solely on Street. Accordingly, we will limit our discussion to Street.

page 5), each element in Street discharges directly to the data line. Street does not switch charge between elements. Therefore, Street again does not meet the claimed limitation. In view of the deficiencies of Street and the lack of evidence or explanation by the examiner to overcome such deficiencies, we cannot sustain the rejection of claim 1 nor the claims which depend therefrom, claims 2 through 12.

Each of claims 13 and 19 recites an array of pixels, wherein each pixel constitutes a plurality of sub-pixels. Also, each pixel is addressed by a single gate line and a single (or, for claim 19, common) data line. Thus, the sub-pixels are equivalent to claim 1's sensors, and the pixels are equivalent to claim 1's clusters. As we have explained above, Street addresses each pixel with a gate and a data line, and Street shows no further subdivisions of the pixels. Therefore, Street is deficient for the same reasons described above.

Further, claim 13 recites that a sub-pixel translates charge to another sub-pixel (of the same pixel). Similarly claim 19 recites that plural sub-pixels (of a pixel) translate charge to the data line through one sub-pixel of the same

pixel. As discussed above, Street does not subdivide the pixels into sub-pixels, and each pixel discharges directly to the data line, not through other pixels. Therefore, Street does not meet the limitations of claims 13 and 19. Consequently, we cannot sustain the rejection of claims 13, 19, and the claims which depend therefrom, claims 14 through 18, 20, and 21.

CONCLUSION

The decision of the examiner rejecting claims 1 through 21 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
ERROL A. KRASS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)	

ALBERT P SHARPE III
FAY SHARPE BEALL FAGAN MINNICH & MCKEE
1100 SUPERIOR AVENUE
SUITE 700
CLEVELAND, OH 44114-2518